

Radiography in Dogs with Acute Abdominal Signs

Selena L. Lane, DVM, DACVECC

University of Georgia

In the Literature

Mavromatis MV, Solano M, Thelen MY. Utility of two-view vs. three-view abdominal radiography in canines presenting with acute abdominal signs. *Vet Radiol Ultrasound*. 2018;59(4):381-386.

FROM THE PAGE ...

Abdominal radiography plays a critical role in the diagnostic assessment of small animals presented with acute abdominal signs. Historically, abdominal radiographic series consist of one lateral view and one ventrodorsal view; however, there is also evidence supporting that obtaining both a left and right lateral abdominal view, in addition to an orthogonal view, can increase diagnostic accuracy.

The goal of this study was to determine if having a third view of the abdomen in dogs with signs of abdominal disease resulted in improved confidence and/or accuracy of diagnosis, particularly regarding the need for surgical intervention. Data were compiled from 48 dogs presented to an emergency service at a veterinary teaching hospital. All patients were presented with clinical signs of acute onset abdominal disease (eg, vomiting, diarrhea, constipation, abdominal pain) and had 3 abdominal radiographic views completed, which were then provided to both board-certified radiologists and general practitioners with at least 3 years of experience for evaluation of changes consistent with abdominal disease. The practitioners were asked to identify abnormalities from a predefined list of radiographic findings (eg, loss of serosal detail, presence of foreign material, abdominal masses, small intestinal dilation) and to determine their confidence as to whether surgery was indicated for the patient.

As compared with 2 views, evaluation of a third abdominal view did not show any significant improvement in accuracy of radiographic diagnosis in this patient population. One patient had diffuse small intestinal dilation that was more confidently diagnosed with an additional view, but overall confidence in radiographic findings was not improved by the availability of a third view.

Results did not support that an additional view was necessary or beneficial in making a diagnosis; thus, it is reasonable for practitioners to continue to recommend 2-view abdominal radiographic series to make routine diagnoses for acute abdominal disease. Future studies may focus on identifying cases in which it is difficult to make a definitive diagnosis based on 2-view abdominal radiographs and should aim to identify whether evaluation of the additional view for each patient increases the clinician's confidence in making a recommendation for surgical intervention.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1 Dogs with acute GI signs should have at least 2-view abdominal radiographs completed to help clinicians identify surgical disease conditions.
- 2 Additional lateral radiographic views of the abdomen may not be necessary to support a diagnosis of abdominal disease in dogs.
- 3 Pending radiographic findings, abdominal ultrasonography may be required in dogs with acute abdominal signs to clarify whether surgical intervention is necessary.

Suggested Reading

- Ciasca TC, David FH, Lamb CR. Does measurement of small intestinal diameter increase diagnostic accuracy of radiography in dogs with suspected intestinal obstruction? *Vet Radiol Ultrasound*. 2013;54(3):207-211.
- Drost WT, Green Em, Zekas LJ, Arnes TK, Su L, Habing GG. Comparison of computed tomography and abdominal radiography for detection of canine mechanical intestinal obstruction. *Vet Radiol Ultrasound*. 2016;57(4):366-375.
- Finck C, D'Anjou MA, Alexander K, Specchi S, Beauchamp G. Radiographic diagnosis of mechanical obstruction in dogs based on relative small intestinal external diameters. *Vet Radiol Ultrasound*. 2014;55(5):472-479.